Shultz Chides Scientists But Also Asks for Advice

Secretary of State George P. Shultz recently invoked the name of pacifist and political activist Albert Einstein in a speech where he chided scientists for criticizing President Reagan's defense policies.

Speaking at a dinner held in his honor at the National Academy of Sciences (NAS), Shultz said that "too often in recent years we have seen" brilliant scientists "speaking out on behalf of political ideas that unfortunately are neither responsible nor particularly brilliant." He added: "Scientists should not expect their words to have special authority in nonscientific areas where they are, in fact, laymen. Scientists are not specialists in the field of world politics, or history, or social policy, or military doctrine."

Shultz twice cited Einstein's warning with reference to nuclear weapons that "everything has changed except our modes of thinking." He went on to observe that some of the criticism of the President's Strategic Defense Initiative comes "less from the debate over technical feasibility . . . than from the passionate defense of orthodox doctrine in the face of changing strategic realities."

Shultz, who has made an effort to upgrade the role of scientific officers at diplomatic posts, was introduced by NAS president Frank Press as "the first Secretary of State to think seriously about" the relationship of science and American foreign policy.

In his speech, Shultz put special emphasis on the need to find a balance between security and openness in the exchange of information and technology. He cited the current revolution in information technology as "testimony to the crucial importance of entrepreneurship—and government policies that give free rein to entrepreneurship—as the wellspring of technological creativity and economic growth." Shultz said, ". . . any government that resorts to heavy-handed measures to control or regulate or tax the flow of electronic information will find itself stifling the growth of the world economy as well as its own progress." He also criticized government efforts to prevent the copyrighting of computer software on grounds that they "only reduce incentives for developing new types of software and inhibit progress."

Shultz said the expertise of scientists is needed in addressing the questions of technology transfer.

The other area in which he specifically welcomed scientific input was in analyzing the potential for proliferation of chemical weapons and devising ways to check the international flow of materials used in their manufacture.

—CONSTANCE HOLDEN

USDA's Basic Research Needs Beefing Up

The research arm of the U.S. Department of Agriculture must change significantly if it is to become a leader in basic agricultural research, according to a new report published by the National Academy of Sciences. The report says that the Agricultural Research Service (ARS) must refocus its research priorities and restructure itself. The recommendations for institutional change, which include a call for consolidating research centers, are sure to be politically controversial if adopted.

For more than a decade, the department's research program has been bombarded with criticism for its lack of scientific innovation and for bureaucratic sluggishness. Two years ago ARS administrator Terry B. Kinney set his sights on reform and, in the process, asked the Academy for advice on how to do it. The bulk of the report, "New Directions for Biosciences Research in Agriculture: High Reward Opportunities,"* details a multitude of scientific fields that it says are ripe for research by the agricultural community in general and then suggests specific areas where ARS itself should concentrate its efforts. The recommendations were drawn up by a 18-member committee comprised mainly of academic scientists, with three industry scientists.

The impetus behind this call for change is the burgeoning field of genetic engineering. Seen as a powerful tool to revolutionize agricultural research, the report says that the agricultural community should use biotechnology to gain a better understanding of plant and animal genetics, diseases, and reproduction. For example, ARS should concentrate on genetic research related to important crops and food animals and maintain a germ-plasm repository. In plant sciences, research using genetic engineering techniques is beginning to reveal important information about photosynthesis, and nitrogen and carbon dioxide fixation, which eventually may help improve plant productivity. In animal sciences, more research is needed in developmental and reproductive biology.

To position itself at the cutting edge of research, ARS will gradually have to make some institutional changes, the report says. Many of its proposals have been made before, but they have proved to be politically difficult to implement. For example, ARS currently has 147 research centers located across the nation. The report says that "the number of sites is too large and must be reduced" by consolidating centers conducting similar research, or combining some of the centers with universities. It noted that at many of the centers, 90 percent of the budget is devoted to salaries and advised that this percentage eventually be cut back to 75 percent. Committee chairman Ralph Hardy, who was formerly head of research for Du Pont and is now president of BioTechnica, said at a press briefing, that these staff cutbacks can be achieved "in an orderly fashion" through attrition.

Hardy also stressed that ARS should look to the National Institutes of Health as a model. The report advised ARS to set up an advisory council made up of leading scientists from outside the government that would report directly to the administrator and hire a much greater number of postdoctoral fellows, expanding from the current program from 25 to 750 positions. Other scientists should be considered for tenure only after 5 years of work instead of the current practice of granting tenure after 1 year.

Hardy said, "We're saying that ARS can't do everything, but it has to decide whether it wants to continue in the same track." He said that industry cannot afford to do the basic research that the report details. "We have to keep in mind that we are in a world competitive game in agriculture."

—MARJORIE SUN

*National Academy Press, 2101 Constitution Avenue, NW, Washington, D.C. 20418.